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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,561	12/17/2003	Tomoyuki Ohzeki	FS-F03218-01	4508
37398	7590	04/05/2006	EXAMINER	
TAIYO CORPORATION 401 HOLLAND LANE #407 ALEXANDRIA, VA 22314			CHEA, THORL	
			ART UNIT	PAPER NUMBER
			1752	

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/736,561	<b>Applicant(s)</b> OHZEKI ET AL.	
	<b>Examiner</b> Thorl Chea	<b>Art Unit</b> 1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4-8 and 10-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-8 and 10-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☒ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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### DETAILED ACTION

1. This second office action is responsive to the communication submitted on January 26, 2006; claims 1, 4-8, 10-20 are pending in this instant application and claims 2-3, 9 have been canceled.

#### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5-8, 11, 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 5-8 is indefinite due to the cancellation of claim 3 (i.e. claims depends on canceled claims); the use of the term "type" renders claim 11 and claim 15 indefinite. See "type", *Ex parte Copenhagen*, 108 USPQ 118.

#### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 7, 10, 14-17, 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shor et al (US Patent No. 6,413,710) and Siga et al (US Patent 4,332,889).

See Shor et al as a whole especially the disclosure of silver halide in column 14, which discloses the silver halide grains having cubic or tabular morphology; the size of the grains in

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column lines 21-29; the silver halide includes silver bromide, silver iodide, silver chloride, silver iodobromide, silver chlorobromiodide, silver chlorobromide and the average is from 0.01 micron to 1.5 microns, and the average size of the silver halide grains is expressed in term by the average diameter if the grains are spherical, and by the average of the diameter of equivalent circles for the projected image if the grains are cubic or in other non-spherical shape in lines 9-20 and 43-60; the preparation of silver halide grains that have been formed in presence of a hydroxyltetrazidene or an N-heterocyclic compound comprising mercapto group in abstract and column 10-12; and the sulfur-containing chemical sensitizing compound having thiourea ligand in column 17, compounds (IV) to (VI).

Siga et al (US 4,332,889) disclose in column 6, lines 43-68 disclose the relative amount of the silver iodide with respect to silver bromide to satisfy the sensitivity condition and storage condition. It is disclosed that "from the view point of sensitivity of image forming material, the silver halide is desired to contains, beside silver iodide, at least 2 mole %, based on silver halide component, silver bromide and/or silver chloride, although the silver halide may include only silver iodide, i.e. 100 mole % of silver iodide. Furthermore, from view point of stability of the raw image forming material, it is desired that silver halide component contains, besides silver iodide, silver bromide than silver chloride. Therefore, the most preferred silver halide component consists of silver iodide and silver bromide. In this case, silver iodide and silver bromide may be provided in either a mixture thereof or mixed crystals thereof. The molar ratio of silver iodide to silver bromide may be preferably 30/70 to 98/2, more preferably 50/50 to 95/5."

Shor et al disclose the photothermographic material substantially as claimed, except failing to exemplified the silver halide having silver halide content from 70 mol % to 100 mol %, but

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suggest the use of silver iodide among the other known silver halide such as silver bromide, silver chloride, silver iodobromide, silver chlorobromiodide, and silver chlorobromide having the average sphere-equivalent diameter within the scope of 0.1 micron to 1.5 micron within the range from 0.3 micron to 5.0 micron, the dimension of the silver halide presented in the claims. Moreover, Shor et al disclose compound containing nitrogen atom and sulfur atom as chemical sensitizer. These chemical sensitizers are disclosed in the present specification disclosure as "silver iodide complex forming agent". See for instance mercapto compound and the compound having thiourea ligand on pages 54 and 62 of the specification disclosure. Therefore, the silver iodide complex forming agent have been conventionally known in the art as chemical sensitizer or antifoggant for photothermographic material. Shor et al may not exemplified the use of silver iodide or the silver halide having iodide in the range from 70 mole % to 100 % presented in the claimed invention. However, the selection of the silver halide such as silver iodide or silver halide containing high silver iodide would have been known in the art due the teaching of Siga et al that the silver iodide or silver halide having silver iodide and silver bromide with molar ratio of silver iodide to silver bromide may be preferably 30/70 to 98/2, more preferably 50/50 to 95/5 provide a photothermographic material with stability of the raw image forming material. Therefore, it would have been obvious to the worker of ordinary skill in the art to use silver iodide suggested in Shor et al or the silver halide having silver iodide and silver bromide with molar ratio of silver iodide to silver bromide may be preferably 30/70 to 98/2, more preferably 50/50 to 95/5 taught in Siga et al in the material of Shor et al to provide a photothermographic material with stability of the raw image forming material, and thereby provide a material as

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claimed. The toning agent such as phthalic acid or phthalazine disclosed in column 28, lines 1-34 have been known as development accelerator.

6. Claims 4-6, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shor et al (US Patent No. 6,413,710 ) and Siga et al (US Patent 4,332,889) as applied to claims 1, 7, 10, 16-17, 19-20 above, and further in view of Makasky et al (US Patent No. 4,459,353).

Shor et al disclose the silver halide including silver iodide wherein the cubic or tabular morphology are preferred, but fails to disclose the aspect ration thereof or the silver halide tabular grains having a dislocation associated therewith. Maskasky discloses a thin tabular silver iodide having a high average aspect ratio of greater than 8:1 and account at least 50 percent of the total projected area of the silver halide grains presented in the emulsion. The sensitizing silver salt is deposit onto the host tabular grains at selected sites can be generally chosen among silver salt capable of being epitaxially grown on silver halide including silver chloride is disclosed in column 10, lines 1-37. Therefore, it would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use a known silver iodide tabular known in the art such as taught in Makasky in the material taught in Shor et al with an expectation of achieving a useful material.

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable Simpson et al in view of Siga et al as applied to claims 1, 7, 10, 16-17, 19-20 above, and further in view of Tsuzuki et al (US Patent No. 6,093,529). Tsuzuki discloses the use of uv absorber in a photothermographic material to prevent its photographic properties from deteriorating. See column 3, lines 19-35. . It would have been obvious to the worker of ordinary skill in the art at the time the invention was

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made to use the uv dye and the silver halide with high iodide content taught in Tsuzuki et al in the material of Reeves or Simpson et al to prevent its photographic properties from deteriorating, and thereby provide a material as claimed.

8. Claims 7, 17, 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shor et al in view of Siga et al as applied to claims 1, 4-5, 10, 14-15, 17, 19-20 above, and further in view of Zou et al (US Patent No. 6,576,410).

Zou et al a X-ray photothermographic material wherein both side of a support are provided with imaging layer; the use X-ray intensifying screen to expose the material and a compound having structure within the scope of claim 7. See abstract, compound in columns 28-37, T-1 to T-59; and column 14, compound RS-1 and column 15, RS-1a, RS-1b. It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use the toner taught and sensitizer to improve the toning property in combination with the coating of the imaging layer on both side of the support to form an X-ray photothermographic material in the use of X-ray intensifying screen, and thereby provide a material as claimed.

9. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shor et al in view of Siga et al as applied to claims 1, 7, 10, 14-17, 19-20 above, and further in view of Goto et al (US Patent No. 6,787,298) and Okada et al (US Patent No. 6,120,983). The compound of formula (I) in claim 12 and claim 13 has been known in Goto et al and Okada et al. See compound in columns 27-52, compound I-58, and column 13, lines 1-45. These compound provide a photothermographic material with higher sensitivity. It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use the compound taught

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in Goto et al and Okada et al to increase the sensitivity of the material Shor et al, and thereby provide a material as claimed.

### **Response to Arguments**

10. Applicant's arguments filed January 26, 2006 have been fully considered but they are not persuasive because of new ground of rejection above. See the teaching of Siga et al and Sor et al above which discloses silver halide having iodide content within the scope of the claimed invention. Shor et al discloses silver halide including silver iodide and the average diameter thereof is up to several micrometers depending on their desired used. The average grains size taught in Shor et al is 0.01 micron to 1.5 microns which within the size of the silver halide claimed in the present claimed invention.

The argument with the results shown on page 292, Table 6 and page 300 Table 7 is not persuasive. The results are not commensurate with the scope of the claimed invention. The results are related to the pure silver halide tabular grains, while the scope of the claims encompasses the scope of silver halide other than silver iodide tabular grains. The claimed invention is not directed to silver iodide tabular having an average sphere-equivalent diameter of from 0.3 micron to 5.0 microns. The silver halide grains having average sphere-equivalent diameter of from 0.3 micron to 5.0 microns include any silver halide grains other than that containing 70 mole % to 100 mole %. Moreover, it would have expected to the worker of ordinary skill in the art that larger silver halide grains would be more sensitive due to large surface area and the material containing high silver iodide would be found more stable in term of raw material and print-out since the silver iodide is less sensitive to light. Accordingly, it is



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believed that the invention as claimed would have been found prima facie obvious to the worker of ordinary skill in the art at the time the invention was made.

*Conclusion*

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thorl Chea whose telephone number is (571) 272-1328. The examiner can normally be reached on 9 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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2006-03-31

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